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Sequence Listing was accepted.

See attached Validation Report.

If you need help call the Patent Electronic Business Center at (866)
217-9197 (toll free).

Reviewer: markspencer

Timestamp: [year=2009; month=1; day=22; hr=9; min=18; sec=49; ms=674;]

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Application No: 10551405 Version No: 2.0

Input Set:

Output Set:

Started: 2009-01-08 17:36:10.597
Finished: 2009-01-08 17:36:39.094
Elapsed: 0 hr(s) 0 min(s) 28 sec(s) 497 ms
Total Warnings: 23
Total Errors: 12
No. of SeqIDs Defined: 23
Actual SeqID Count: 23

Error code	Error Description
W 213	Artificial or Unknown found in <213> in SEQ ID (1)
E 257	Invalid sequence data feature in <221> in SEQ ID (1)
W 213	Artificial or Unknown found in <213> in SEQ ID (2)
W 213	Artificial or Unknown found in <213> in SEQ ID (3)
W 213	Artificial or Unknown found in <213> in SEQ ID (4)
E 257	Invalid sequence data feature in <221> in SEQ ID (4)
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W 213	Artificial or Unknown found in <213> in SEQ ID (5)
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W 213	Artificial or Unknown found in <213> in SEQ ID (7)
W 213	Artificial or Unknown found in <213> in SEQ ID (8)
W 213	Artificial or Unknown found in <213> in SEQ ID (9)
W 213	Artificial or Unknown found in <213> in SEQ ID (10)
W 213	Artificial or Unknown found in <213> in SEQ ID (11)
E 257	Invalid sequence data feature in <221> in SEQ ID (11)

Input Set:

Output Set:

Started: 2009-01-08 17:36:10.597
Finished: 2009-01-08 17:36:39.094
Elapsed: 0 hr(s) 0 min(s) 28 sec(s) 497 ms
Total Warnings: 23
Total Errors: 12
No. of SeqIDs Defined: 23
Actual SeqID Count: 23

Error code	Error Description
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W 213	Artificial or Unknown found in <213> in SEQ ID (19)
W 213	Artificial or Unknown found in <213> in SEQ ID (20) This error has occurred more than 20 times, will not be displayed
E 257	Invalid sequence data feature in <221> in SEQ ID (23)
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SEQUENCE LISTING

<110> Berzofsky, Jay A.
Okazaki, Takahiro

<120> Enhanced HIV-1 Vaccines and Methods for Their Use

<130> 015280-481100US

<140> 10551405

<141> 2009-01-08

<150> US 60/459,507

<151> 2003-03-31

<150> WO PCT/US04/09617

<151> 2004-03-29

<160> 23

<170> PatentIn Ver. 2.1

<210> 1

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:variant of
synthetic sequence motif derived from HIV-1
reverse transcriptase (RT) catalytic site region,
immunostimulating peptide

<220>

<221> MOD_RES

<222> (1)

<223> Xaa = any hydrophobic amino acid

<400> 1

Xaa Leu Tyr Gln Tyr Met Asp Asp Val

1 5

<210> 2

<211> 9

<212> PRT

<213> Artificial Sequence

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<223> Description of Artificial Sequence:variant of
synthetic sequence motif derived from HIV-1
reverse transcriptase (RT) catalytic site region,
immunostimulating peptide, RT-2L9V, 2L9V

<400> 2

Val Leu Tyr Gln Tyr Met Asp Asp Val

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<213> Artificial Sequence

<223> Description of Artificial Sequence:variant of synthetic sequence motif derived from HIV-1 reverse transcriptase (RT) catalytic site region, immunostimulating peptide, RT-1Y2L9V

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<213> Artificial Sequence

<223> Description of Artificial Sequence:variant of
synthetic sequence motif derived from HIV-1
reverse transcriptase (RT) catalytic site region,
immunostimulating peptide

<223> Xaa = any amino acid, may be present or absent

<223> Xaa = any hydrophobic amino acid

<223> Xaa = any amino acid, may be present or absent

15

30

45

60

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Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
					85				90					95	
Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
					100			105					110		
Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
					115			120				125			
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					130			135				140			
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145					150					155					160
Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
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Val	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
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225					230					235					240
Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
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Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
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<220>															
<223> Description of Artificial Sequence:variant of synthetic sequence motif derived from HIV-1 reverse transcriptase (RT) catalytic site region, immunostimulating peptide															
<220>															
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<222> (1)..(200)															
<223> Xaa = any amino acid, may be present or absent															
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Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
				20				25				30			
Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
				35				40				45			
Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
50				55				60							
Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
65				70				75				80			
Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
				85				90				95			
Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
				100				105				110			
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<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:variant of
synthetic sequence motif derived from HIV-1
reverse transcriptase (RT) catalytic site region,
immunostimulating peptide

<220>

<221> MOD_RES

<222> (1)..(200)

<223> Xaa = any amino acid, may be present or absent

<220>

<221> MOD_RES

<222> (210)..(409)

<223> Xaa = any amino acid, may be present or absent

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Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
20 25 30

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
35 40 45

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
50 55 60

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
65 70 75 80

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
85 90 95

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
100 105 110

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
115 120 125

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
130 135 140

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
145 150 155 160

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
165 170 175

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
180 185 190

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Tyr Leu Tyr Gln Tyr Met Asp Asp

195	200	205
Val Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa		
210	215	220
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa		
225	230	235 240
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa		
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Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa		
	260	265 270
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa		
	275	280 285
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa		
	290	295 300
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa		
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	340	345 350
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa		
	355	360 365
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa		
	370	375 380
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa		
385	390	395 400
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	405	

<210> 7

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:HIV-1 reverse
transcriptase (RT) catalytic site region sequence
motif, wild-type RT (179-187), RT-WT

<400> 7

Val Ile Tyr Gln Tyr Met Asp Asp Leu

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<210> 8
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:variant of
synthetic sequence motif derived from HIV-1
reverse transcriptase (RT) catalytic site region,
RT-1Y immunostimulating peptide

<400> 8
Tyr Ile Tyr Gln Tyr Met Asp Asp Leu
1 5

<210> 9
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:HIV-gag
peptide, gag (p17) (77-85), p17-WT

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Ser Leu Tyr Asn Thr Val Ala Thr Leu
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<210> 10
<211> 9
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<213> Artificial Sequence

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peptide 58-66, FMP, Flu-MP (58-66)

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<210> 11
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:variant of
synthetic sequence motif derived from HIV-1
reverse transcriptase (RT) catalytic site region
immunostimulating peptide

<220>
<221> MOD_RES

<222> (1)
<223> Xaa = any hydrophobic amino acid, preferably Val

<400> 11
Xaa Leu Tyr Gln Tyr Met Asp Asp Val
1 5

<210> 12
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<220>
<223> Description of Artificial Sequence:RT (179-187)-WT
alanine substituted peptide 1A

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Ala Ile Tyr Gln Tyr Met Asp Asp Leu
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<210> 13
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<213> Artificial Sequence

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alanine substituted peptide 2A

<400> 13
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<210> 14
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<223> Description of Artificial Sequence:RT (179-187)-WT
alanine substituted peptide 3A

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<210> 15
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<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:RT (179-187)-WT

alanine substituted peptide 4A

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<210> 16

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<212> PRT

<213> Artificial Sequence

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<223> Description of Artificial Sequence:RT (179-187)-WT
alanine substituted peptide 5A

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<210> 17

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<212> PRT

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<223> Description of Artificial Sequence:RT (179-187)-WT
alanine substituted peptide 6A

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<210> 18

<211> 9

<212> PRT

<213> Artificial Sequence

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<223> Description of Artificial Sequence:RT (179-187)-WT
alanine substituted peptide 7A

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<210> 19

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:RT (179-187)-WT
alanine substituted peptide 8A

<400> 19

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1 5

<210> 20

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<212> PRT

<213> Artificial Sequence

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<223> Description of Artificial Sequence:RT (179-187)-WT
alanine substituted peptide 9A

<400> 20

Val Ile Tyr Gln Tyr Met Asp Asp Ala

1 5

<210>